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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/597,925

09/13/2006

Nicholas R. Blandford

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05/20/2010

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EXAMINER

HRUSKOCI, PETER A

ART UNIT

PAPER NUMBER

1797

NOTIFICATION DATE

DELIVERY MODE

05/20/2010

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

gpo.mail@ge.com  
allyson.carnaroli@ge.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/597,925	<b>Applicant(s)</b> BLANDFORD ET AL.	
	<b>Examiner</b> /Peter A. Hruskoci/	<b>Art Unit</b> 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 January 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3-6,8-10,14 and 15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-6,8-10,14 and 15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

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Claims 1, 3-6, 8-10, 14 and 15 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. In claims 1 and 14 “use of mineral acid doping” lacks clear antecedent basis in the specification as originally filed, and raises the issue of new matter. Claims 3-6, 8-10, and 15 depend from the above claims.

Claims 1, 3-6, 8-10, 14 and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claims 1 and 14 “mineral acid doping” is vague and indefinite because it is unclear how this term further limits the claims. In claim 1 “the phosphonate polymer (I) lacks clear antecedent basis. Claims 3-6, 8-10, and 15 depend from the above claims.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-6, 8, 10, 14, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hodgson et al. 4,204,953 in view of Becker 4,446,028. Hodgson et al. disclose (see col. 1 line 14 through col. 4 line 65) a method of inhibiting scale deposition including magnesium hydroxide in a saline water evaporator or desalination system substantially as claimed. The

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claims differ from Hodgson et al. by reciting the addition of a specific phosphono functional polymer or a polymer of isopropenylphosphonic acid, and a dispersant respectively. Becker disclose (see col. 2 line 3 through col. 5 line 56) that it is known in the art to utilize the recited polymers, to aid in inhibiting magnesium scale formation in a desalting or desalination system. It is submitted that the conventional water treating agents and additive polymers utilized in the compositions disclosed in Becker or Hodgson et al. are known in the art to function as dispersants, respectively. It would have been obvious to one skilled in the art to modify the method of Hodgson et al. by addition of the recited polymers and dispersant in view of the teachings of Becker, to aid in inhibiting magnesium hydroxide scale deposition in the desalination system. The specific Mw of the polymers and the use of mineral acid, would have been an obvious matter of process optimization to one skilled in the art, depending on the specific medium treated and results desired, absent a sufficient showing of unexpected results.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hodgson et al. 4,204,953 in view of Becker 4,446,028 as above, and further in view of Bendiksen et al. 5,087,376. The claim differs from the references as applied above by reciting that the phosphono functional polymer is poly(vinylphosphonic acid). Bendiksen et al. disclose (see col. 3 line 13 through col. 4 line 43) that it is known in the art to add a polymer of vinyl phosphonic acid to inhibit scale deposition including magnesium salts in aqueous desalination systems. It would have been obvious to one skilled in the art to modify the references as applied above, by addition of poly(vinylphosphonic acid) in view of the teachings of Bendiksen et al., to aid in inhibiting scale deposition in the desalination system.

Applicants argue that the features recited in instant claim 1 including inhibiting the

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formation of  $\text{Mg}(\text{OH})_2$  scale on the structural parts of a desalination system, without the use of mineral acid doping, are not taught or suggested in the Becker (028) or Hodgson et al. It is noted the term mineral acid doping lacks clear antecedent basis, and is vague and indefinite for reasons stated above. It is further noted that Hodgson et al. as applied above teaches a method of inhibiting scale deposition including magnesium hydroxide in a saline water evaporator or desalination system with a carboxylate polymer II such as polymaleic anhydride as recited in the instant claims. It would have been obvious to one skilled in the art having the references before him, to modify the method of Hodgson et al. by addition of the recited phosphono functional polymer and dispersant in view of the teachings of Becker, to aid in inhibiting magnesium hydroxide scale deposition in the desalination system.

Applicants allege that by adding the particular polymer of the presently claimed invention to the aqueous medium, the addition of mineral acid is eliminated, and the formation of magnesium hydroxide scale is rigorously inhibited. It is submitted that the teachings of Becker as applied above, appear to teach the use of the particular polymers without the addition of acid, to aid in inhibiting magnesium scale in a sea water desalting or desalination system.

Furthermore, applicants have not provided sufficient comparative evidence with the prior art used in the above rejections, to support the above allegation.

Applicants' arguments concerning Bendiksen et al. appear to be based on the propriety of the combination of Hodgson et al. and Becker. This combination is deemed properly applied for reasons stated above.

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The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to /Peter A. Hruskoci/ whose telephone number is (571) 272-1160. The examiner can normally be reached on Monday through Friday from 8:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on (571) 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Peter A. Hruskoci/  
Primary Examiner  
Art Unit 1797

5/15/10